



CITY OF CLAYTON

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February 1, 2012

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1515 Clay Street, Suite 1400
Oakland, CA 94612

Ms. Pamela Creedon, Executive Officer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
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Dear Mr. Wolfe and Ms. Creedon:

Enclosed is the City of Clayton's Short-Term Trash Reduction Plan submitted in accordance with Provision C.10.a. in NPDES Permit No. CAS612008 issued by the San Francisco Bay Regional Water Quality Control Board, and/or NPDES Permit No. CA0083313 issued by the Central Valley Regional Water Quality Control Board.

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,



Laura Hoffmeister,
Assistant to the City Manager

Baseline Trash Load and Short-Term Trash Load Reduction Plan

Submitted by:



City of Clayton, 6000 Heritage Trail, Clayton, CA 94517

In compliance with Provisions C.10.a(i) and C.10.a(ii) of Order R2-2009-0074

January 25, 2011

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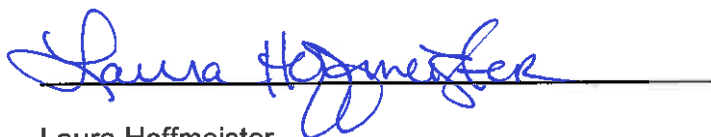
**City of Clayton
SHORT-TERM TRASH LOAD REDUCTION PLAN**

CERTIFICATION STATEMENT

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The City of Clayton reserves the right to change or modify the plan in the future based upon new or updated information/data, financial resources and staffing.

Signature by Duly Authorized Representative:



Laura Hoffmeister
Assistant to the City Manager

January 25, 2011

TABLE OF CONTENTS

LIST OF TABLES	VII
LIST FIGURES	VII
ABBREVIATIONS	VIII
PREFACE	VIII
1.0 INTRODUCTION	2
BASELINE TRASH GENERATION RATES PROJECT	2
TRASH LOAD REDUCTION TRACKING METHOD SUMMARY	3
SHORT-TERM TRASH LOAD REDUCTION PLAN	3
2.0 BASELINE TRASH LOADING ESTIMATE	5
PERMITTEE CHARACTERISTICS	5
DEFAULT TRASH GENERATION RATES (REGIONAL APPROACH)	6
Permittee Land Use	7
PERMITTEE-SPECIFIC BASELINE TRASH LOADING RATES	7
Accounting for Baseline Street Sweeping	7Error! Bookmark not defined.
Accounting for Baseline Storm Drain Inlet Maintenance	8
Accounting for Baseline Pump Station Maintenance	8
BASELINE TRASH LOADING ESTIMATES	8
3.0 LOAD REDUCTION CALCULATION PROCESS	10
STEP #1: TRASH GENERATION REDUCTION CONTROL MEASURES	10
STEP #2: ON-LAND INTERCEPTION CONTROL MEASURES	11
STEP #3: CONTROL MEASURES THAT INTERCEPT TRASH IN THE MS4	12
STEP #4: CONTROL MEASURES THAT INTERCEPT TRASH IN WATERWAYS	12
STEP #5: COMPARISON TO BASELINE TRASH LOAD	12
4.0 ENHANCED TRASH CONTROL MEASURES	13
CR-3: PUBLIC EDUCATION AND OUTREACH PROGRAMS	14
Baseline Level of Implementation	14
Enhanced Level of Implementation	14
Percent Reduction from Enhancements	14
CR-5: ANTI-LITTERING AND ILLEGAL DUMPING ENFORCEMENT ACTIVITIES	15
Baseline Level of Implementation	15
Enhanced Level of Implementation	15
Percent Reduction from Enhancements	15
CR-6: IMPROVED TRASH BIN/CONTAINER MANAGEMENT	16
Baseline Level of Implementation	16
Enhanced Level of Implementation	16
Percent Reduction from Enhancements	17
QF-1: ON-LAND TRASH CLEANUPS (VOLUNTEERS AND/OR MUNICIPAL)	18
Baseline Level of Implementation	18
Enhanced Level of Implementation	18
Percent Reduction from Enhancements	19
QF-2: ENHANCED STREET SWEEPING	20
Baseline Level of Implementation	20
Enhanced Level of Implementation	20
Percent Reduction from Enhancements	20

QF-4: ENHANCED STORM DRAIN INLET MAINTENANCE	25
<i>Baseline Level of Implementation</i>	25
<i>Enhanced Level of Implementation</i>	25
<i>Percent Reduction from Enhancements</i>	25
QF-5: FULL-CAPTURE TREATMENT DEVICES	26
<i>Baseline Level of Implementation</i>	26
<i>Enhanced Level of Implementation</i>	26
<i>Percent Reduction from Enhancements</i>	26
QF-6: CREEK/CHANNEL/ShORELINE CLEANUPS	27
<i>Baseline Level of Implementation</i>	27
<i>Enhanced Level of Implementation</i>	27
<i>Percent Reduction from Enhancements</i>	27
5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS	28
5.1 ANNUAL REPORTING AND PROGRESS TOWARDS TRASH LOAD REDUCTION GOAL(S)	30
5.2 CONSIDERATIONS OF UNCERTAINTIES	30
6.0 IMPLEMENTATION SCHEDULE	31
7.0 REFERENCES	32

LIST OF TABLES

TABLE 1.1. TRASH CONTROL MEASURES FOR WHICH LOAD REDUCTION QUANTIFICATION CREDITS OR FORMULAS WERE DEVELOPED TO TRACK PROGRESS TOWARDS TRASH LOAD REDUCTION GOALS.....	4
TABLE 2-1: REGIONAL DEFAULT ANNUAL TRASH GENERATION RATES BY LAND USE CATEGORY.....	6
TABLE 2-2: JURISDICTIONAL AREAS AND EFFECTIVE LOADING AREAS IN THE CITY OF CLAYTON BY LAND USE CLASSES IDENTIFIED BY ABAG (2005).....	7
TABLE 2-3: PRELIMINARY ANNUAL TRASH BASELINE LOAD FOR THE CITY OF CLAYTON.....	8
TABLE 4.1. TRASH CONTROL MEASURES THAT WILL BE IMPLEMENTED BY CITY OF CLAYTON TO REACH THE 40% TRASH LOAD REDUCTION.....	13
TABLE QF-3-1. PLANNED ENHANCED STREET SWEEPING PROGRAM IN THE CITY OF CLAYTON.....	21
TABLE QF-6-1. TRASH FULL-CAPTURE TREATMENT DEVICES WITHIN THE JURISDICTIONAL BOUNDARIES OF THE CITY OF CLAYTON THAT ARE PLANNED FOR INSTALLATION BY JULY 1, 2014.....	26
TABLE 5-1. PLANNED ENHANCED TRASH CONTROL MEASURE IMPLEMENTATION WITHIN THE JURISDICTIONAL BOUNDARIES OF THE CITY OF CLAYTON AND ASSOCIATED TRASH LOADS REDUCED.....	28
TABLE 6-1. PRELIMINARY IMPLEMENTATION SCHEDULE FOR ENHANCED TRASH CONTROL MEASURES IN THE CITY OF CLAYTON.....	31

LIST FIGURES

FIGURE 2-1: ESTIMATED TRASH BASELINE LOADING RATES FOR GEOGRAPHICAL AREAS IN THE CITY OF CLAYTON.....	9
FIGURE QF-3-1: PLANNED ENHANCED STREET SWEEPING PROGRAM IN THE CITY OF CLAYTON, QUARRY ROUTE.....	22
FIGURE QF-3-1: PLANNED ENHANCED STREET SWEEPING PROGRAM IN THE CITY OF CLAYTON, CITYWIDE ROUTE.....	23
FIGURE QF-3-1: PLANNED ENHANCED STREET SWEEPING PROGRAM IN THE CITY OF CLAYTON, PRIVATE ROUTE.....	24

ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BID	Business Improvement District
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CDS	Continuous Deflection Separator
CEQA	California Environmental Quality Act
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
GIS	Geographic Information System
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
Q	Flow
SFRWQCB	San Francisco Regional Water Quality Control Board
SWRCB	State Water Resource Control Board
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
Water Board	San Francisco Regional Water Quality Control Board
WDR	Waste Discharge Requirements

PREFACE

This Baseline Trash Load and Short-Term Trash Load Reduction Plan (Plan) is submitted in compliance with provision C.10.a(i) and C.10.a(ii) of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay (Order R2-2009-0074). This Plan was developed using a regionally consistent format developed by the Bay Area Stormwater Management Agencies Association (BASMAA). Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the City of Clayton may choose to amend or revise this Plan. If revisions or amendments are necessary, a revised Short-Term Plan will be submitted to the Water Board via the City of Clayton's annual reporting process.

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1.0 INTRODUCTION

The Municipal Regional Stormwater NPDES Permit for Phase I communities in the San Francisco Bay (Order R2-2009-0074), also known as the Municipal Regional Permit (MRP), became effective on December 1, 2009. The MRP applies to 76 large, medium and small municipalities (cities, towns and counties) and flood control agencies in the San Francisco Bay Region, collectively referred to as Permittees. Provision C.10 of the MRP (Trash Load Reduction) requires Permittees to reduce trash from their Municipal Separate Storm Sewer Systems (MS4s) by 40 percent before July 1, 2014.

Required submittals to the San Francisco Bay Regional Water Quality Control Board (Water Board) by February 1, 2012 under MRP provision C.10.a (Short-Term Trash Loading Reduction Plan) include:

1. (a) Baseline trash load estimate, and (b) description of the methodology used to determine the load level.
2. A description of the Trash Load Reduction Tracking Method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction levels.
3. A **Short-Term Trash Loading Reduction Plan** that describes control measures and best management practices that will be implemented to attain a 40 percent trash load reduction from its MS4 by July 1, 2014;

This Short-Term Trash Load Reduction Plan (Short-Term Plan) is submitted by the City of Clayton in compliance with the portions of MRP provision C.10.a.i listed as 1a and 3 above. In compliance with 1b, BASMAA submitted a progress report on behalf of Permittees that briefly describes the methodologies used to develop trash baseline loads (BASMAA 2011a). These methods are more fully described in BASMAA (2011b, 2011c). Lastly, the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011d) was submitted by BASMAA on behalf of Permittees in compliance with submittal 2 described above. The Baseline Loading Rates and Tracking Method projects are briefly described below.

Baseline Trash Generation Rates Project

Through approval of a BASMAA regional project, Permittees agreed to work collaboratively to develop a regionally consistent method to establish baseline trash loads from their MS4s. The project, also known as the *BASMAA Baseline Trash Generation Rates Project* assists Permittees in establishing a baseline to demonstrate progress towards MRP trash load reduction goals (i.e., 40 percent). The intent of the project was to provide a scientifically-sound method for developing (default) baseline trash generation rates that can be adjusted, based on Permittee/site specific conditions; and used to develop baseline loading rates and loads. Baseline loads form the reference point for comparing trash load reductions achieved through control measure implementation.

Baseline trash loading rates are quantified on a volume per unit area basis and based on factors that significantly affect trash generation (e.g., land use, population density, and economic profile). The method used to establish baseline trash loads for each Permittee builds off “lessons learned” from previous trash loading studies conducted in urban areas (Allison and Chiew 1995; Allison et al. 1998; Armitage et al. 1998; Armitage and Rooseboom 2000; Lippner et al. 2001; Armitage 2003; Kim et al. 2004; County of Los Angeles 2002, 2004a, 2004b; Armitage 2007). The method is based off a conceptual model developed as an outgrowth of these studies (BASMAA 2011b). Baseline trash loading rates were developed through the quantification and characterization of trash captured in Water Board recognized

full-capture treatment devices installed in the San Francisco Bay area. Methods used to develop trash baseline loading rates are more fully described in BASMAA (2011b, 2011c, and 2012).

Trash Load Reduction Tracking Method Summary

The trash load reduction tracking method, described in the *Trash Load Reduction Tracking Method Technical Report*, assists Permittees in demonstrating progress towards reaching trash load reduction goals defined in the MRP (e.g., 40 percent). The tracking method is based on information gained through an extensive literature review and Permittee experiences in implementing stormwater control measures in the San Francisco Bay Area. The literature review was conducted to evaluate quantification methods used by other agencies to assess control measure effectiveness or progress towards quantitative goals. Results are documented in the *Trash Load Reduction Tracking Method: Technical Memorandum # 1 – Literature Review* (BASMAA 2011d).

Methods attributable to specific trash control measures fall into two categories: 1) trash load reduction quantification formulas; and 2) load reduction credits (BASMAA 2011e). Quantification formulas were developed for those trash control measures that were deemed feasible and practical to quantify load reductions at this time. Load reduction credits were developed for all other control measures included in the methodology development. Both categories of methods assume that as new or enhanced trash control measures are implemented by Permittees, a commensurate trash load reduction will occur. Progress towards load reduction goals will be demonstrated through comparisons to established trash baseline load estimates developed through the BASMAA *Baseline Generation Rates Project*.

Short-Term Trash Load Reduction Plan

The purpose of this Short-Term Plan is to describe the current level of implementation of control measures and best management practices, and identify the type and extent to which new or enhanced control measures and best management practices will be implemented to attain a 40 percent trash load reduction from their MS4 by July 1, 2014. The Short-Term Plan was developed using a template created by BASMAA through a regional project. New and enhanced trash control measures (i.e., Best Management Practices) that Permittees may implement to demonstrate trash load reduction goals are included in Table 1.1. This list was developed collaboratively through the BASMAA Trash Committee, which included participation from Permittee, stormwater program, Water Board and non-governmental organization (NGO) staff. The list of control measures is based on: 1) the potential for Permittees to implement; 2) the availability of information required to populate formulas and develop credits; and 3) the expected benefit of implementation. Load reductions associated with each control measure are demonstrated either through a quantification formula (QF) or credits (CR) described in the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

In efforts to reduce trash discharged from MS4s, Permittees may choose to implement control measures that are not included in Table 1.1 or described more fully in BASMAA (2011e). If a Permittee chooses to do so, methods specific to calculating trash load reductions for that control measure would need to be developed. Additionally, at that point, consideration should be given to updating this Short-Term Plan.

Additionally, based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the City of Clayton may amend or revise this Plan. If revisions or amendments are necessary,

a revised Short-Term Plan will be submitted to the Water Board via the City of Clayton's annual reporting process.

Table 1.1. Trash control measures for which load reduction quantification credits or formulas were developed to track progress towards trash load reduction goals.

Load Reduction Credits
Single-use Carryout Plastic Bag Ordinances
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Activities to Reduce Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
Improved Trash Bin/Container Management Activities
Single-Use Food and Beverage Ware Ordinances
Quantification Formulas
On-land Trash Pickup (Volunteer and/or Municipal)
Enhanced Street Sweeping
Partial-Capture Treatment Devices
Enhanced Storm Drain Inlet Maintenance
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

This Short-Term Plan is organized into the following sections:

- Introduction;
- Trash Baseline Load Estimate;
- Load Reduction Calculation Process
- Planned Implementation of New or Enhanced Control Measures;
- Implementation Schedule; and
- References

2.0 BASELINE TRASH LOADING ESTIMATE

***Note:** Tables and information presented in this section are subject to change based on the results of a third monitoring event of the BASMAA Baseline Trash Generation Rates Project. Therefore, this section of the Short-Term Plan may be updated with revised trash generation rates, baseline loading rates, and baseline loads.*

This section provides the estimated annual trash baseline load from the City of Clayton's Municipal Separate Storm Sewer System (MS4). In compliance with Provision C.10.a.ii of the MRP, the City of Clayton worked collaboratively with other MRP Permittees through BASMAA to develop data and the process necessary to establish baseline trash loading estimate from our MS4. The collaborative project was managed through the BASMAA Trash Committee and included a series of steps described in BASMAA (2012) and listed below. The approach was intended to be cost-effective and consistent, but still provide an adequate level of confidence in trash loads from MS4s, while acknowledging that uncertainty in trash loads still exists. The approach entailed the following steps:

1. Conduct literature review;
2. Develop conceptual model;
3. Develop and implement sampling and analysis plan;
4. Test conceptual model;
5. Develop and apply default trash **generation rates** to Permittee effective loading areas;
6. Adjust default trash generation rates based on baseline levels of control measure implementation by the Permittee to develop trash **baseline loading rates**; and,
7. Calculate Permittee-specific annual trash **baseline load**.

Through the collaborative BASMAA project, default baseline trash generation rates (volume per area) were developed for a finite set of categories, based on factors that significantly affect trash loads (e.g., land use). These trash generation rates were then applied to effective loading areas in applicable jurisdictional areas within the City of Clayton. Trash generation rates were then adjusted based on baseline street sweeping, storm drain inlet maintenance, and stormwater pump station maintenance conducted in each applicable area. The sum of the trash loads (i.e., rate multiplied by area) from each effective loading area represents the City of Clayton's baseline trash load from its MS4. A full description of the methods by which trash baseline loads were developed is included in BASMAA (2012a) and is summarized below.

Permittee Characteristics

Incorporated in 1964, the City of Clayton covers 2,451 acres in Contra Costa County, and has a jurisdictional area of 1,656 acres. According to the 2010 Census, it has a population of 10,897, with a population density of 2,840.7 people per square mile, and average household size of 2.72. Of the 10,897 who call the City of Clayton home, 24.4% are under the age of 18, 5.5% are between 18 and 24, 20.1% are between 25 and 44, 35.3% are between 45 and 65, and 14.7% are 65 or older. The median household income was \$101,652 in 2000¹.

¹ From the 2000 Census. The median household income for the City of Clayton from the 2010 Census is not currently available.

Default Trash Generation Rates (Regional Approach)

A set of default trash generation rates was developed via the BASMAA regional collaborative project (BASMAA 2012a). Default generation rates were developed based on a comparison between trash characterization monitoring results, land uses, economic profiles, and other factors that were believed to possibly affect trash generation. Three trash characterization monitoring events were scheduled via the *Trash Generation Rates Project*. Due to the compliance timeline in the MRP, only two of three trash characterization monitoring events were used to develop trash generation rates described in BASMAA (2012a) and presented in this section. Following the completion of the third characterization event (Winter 2011/12), this section of the Short-Term Plan may be updated to reflect the most up-to-date trash generation and loading rates available. Trash generation rates based on the results of two of the three characterization events are shown in Table 2-1 for each trash loading category.

Table 2-1: Regional Default Annual Trash Generation Rates by Land Use Category.

Land Use Category	Generation Rates (Gallons/Acre)
Retail and Wholesale	29.99
High Density Residential	17.04
K-12 Schools	13.14
Commercial and Services/ Heavy, Light and Other Industrial	7.08
Urban Parks	2.14
Low Density Residential	1.25
Rural Residential	0.17

Jurisdictional and Effective Loading Areas

Default trash baseline generation rates presented in Table 2-1 were applied to effective loading areas with **jurisdictional areas** within the City of Clayton. The City of Clayton's jurisdictional areas includes all urban land areas within the City of Clayton boundaries that are subject to the requirements in the MRP. Land use areas identified by a combination of the ABAG 2005 land use dataset and Permittee knowledge that were not included within the City's jurisdictional areas include:

- Federal and State of California Facilities and Roads (e.g., Interstates, State Highways, Military Bases, Prisons);
- Roads Owned and Maintained by Contra Costa County;
- Colleges and Universities (Private or Public);
- Non-urban Land Uses (e.g., agriculture, forest, rangeland, open space, wetlands, water);
- Communication or Power Facilities (e.g., PG & E Substations);
- Water and Wastewater Treatment Facilities; and
- Other Transportation Facilities (e.g., airports, railroads, and maritime shipping ports).

Once the City of Clayton's jurisdictional area was delineated, an effective trash loading area was developed by creating a 200-foot buffer around all streets within the City's jurisdictional area. The purpose of the effective loading area is to eliminate land areas not directly contributing trash to the City's MS4 (e.g., large backyards and rooftops). Both the jurisdictional and the effective loading areas for the City of Clayton are presented in Table 2-2.

Table 2-2: Jurisdictional areas and effective loading areas in the City of Clayton by land use classes identified by ABAG (2005).

Land Use Category	Jurisdictional Area (Acres)	Effective Loading Area (Acres)	% of Effective Loading Area
High Density Residential	173	160	11
Low Density Residential	1,236	1,089	78
Rural Residential	70	45	3
Commercial and Services/ Heavy, Light and Other Industrial	79	53	4
Retail and Wholesale	25	17	1
K-12 Schools	23	17	1
Urban Parks	50	12	1
TOTAL	1,656	1,392	100%

Permittee-Specific Baseline Trash Loading Rates

Regional default trash generation rates developed through the BASMAA regional collaborative project were applied to effective loading areas within the City of Clayton based on identified land uses. These generation rates were then adjusted based on the calculated effectiveness of baseline street sweeping, storm drain inlet maintenance and pump station maintenance implemented by the City. These adjustments were conducted in GIS due to the site specificity of baseline generation rates and baseline control measure implementation. The following sections describe the baseline level of implementation for these three control measures. A summary of trash baseline generation and loading rates for the City of Clayton are provided in Table 2-3 and areas associated with these rates are illustrated in Figure 2-1.

Baseline Street Sweeping

A "baseline" street sweeping program is defined as the sweeping frequency and parking enforcement implemented by the City of Clayton prior to effective date of the MRP. Baseline street sweeping differs from "enhanced" street sweeping, which includes increased parking enforcement and/or sweeping conducted at a frequency greater than baseline ceiling (i.e., once per week for retail land uses and twice per month for all other land uses). The baseline ceiling was created to not penalize implementers of enhanced street sweeping programs prior to the effective date of the MRP. For those Permittee's that sweep less frequent than the baseline ceiling, their current sweeping frequency serves as their baseline.

The City of Clayton's baseline and current street sweeping program includes sweeping most streets in residential areas, downtown, and arterial roads once a month from August to December. This time period includes three months during the wet season and two months during the dry season. Parking enforcement signs for street sweeping are not posted in the City, and there is no parking enforcement equivalent. The estimated trash load reduced via baseline street sweeping is presented in Table 2-3.

Baseline Storm Drain Inlet Maintenance

Within the City, storm drain inlets were cleaned at a baseline level of one time per year prior to the effective date of the MRP. Based on this baseline frequency and the effectiveness rating developed in BASMAA (2012b), the baseline storm drain maintenance program in the City of Clayton has an annual effectiveness rating of 5%. The estimated trash load reduced via baseline storm drain inlet maintenance is presented in Table 2-3.

Baseline Stormwater Pump Station Maintenance

The City of Clayton does not own stormwater pump stations with trash racks.

Baseline Trash Loading Estimate

The estimated baseline trash load from the City of Clayton was calculated as the sum of the loads from the City's effective loading area, adjusted for baseline implementation of street sweeping, storm drain inlet maintenance, and pump station maintenance. The preliminary annual trash baseline load for the City of Clayton is presented in Table 2-3. Preliminary baseline trash loading rates are presented in Figure 2-1 to provide a geographical illustration of areas with estimated low, moderate, high and very high trash loading rates.

Table 2-3: Preliminary annual trash baseline load for the City of Clayton.

Category	Annual Load (gallons)
Preliminary Generation Trash Load	5,222
Load Removed via Baseline Street Sweeping	675
Load Removed via Baseline Storm Drain Inlet Maintenance	227
Load Removed via Baseline Stormwater Pump Station Maintenance	0
Preliminary Trash Baseline Load	4,319

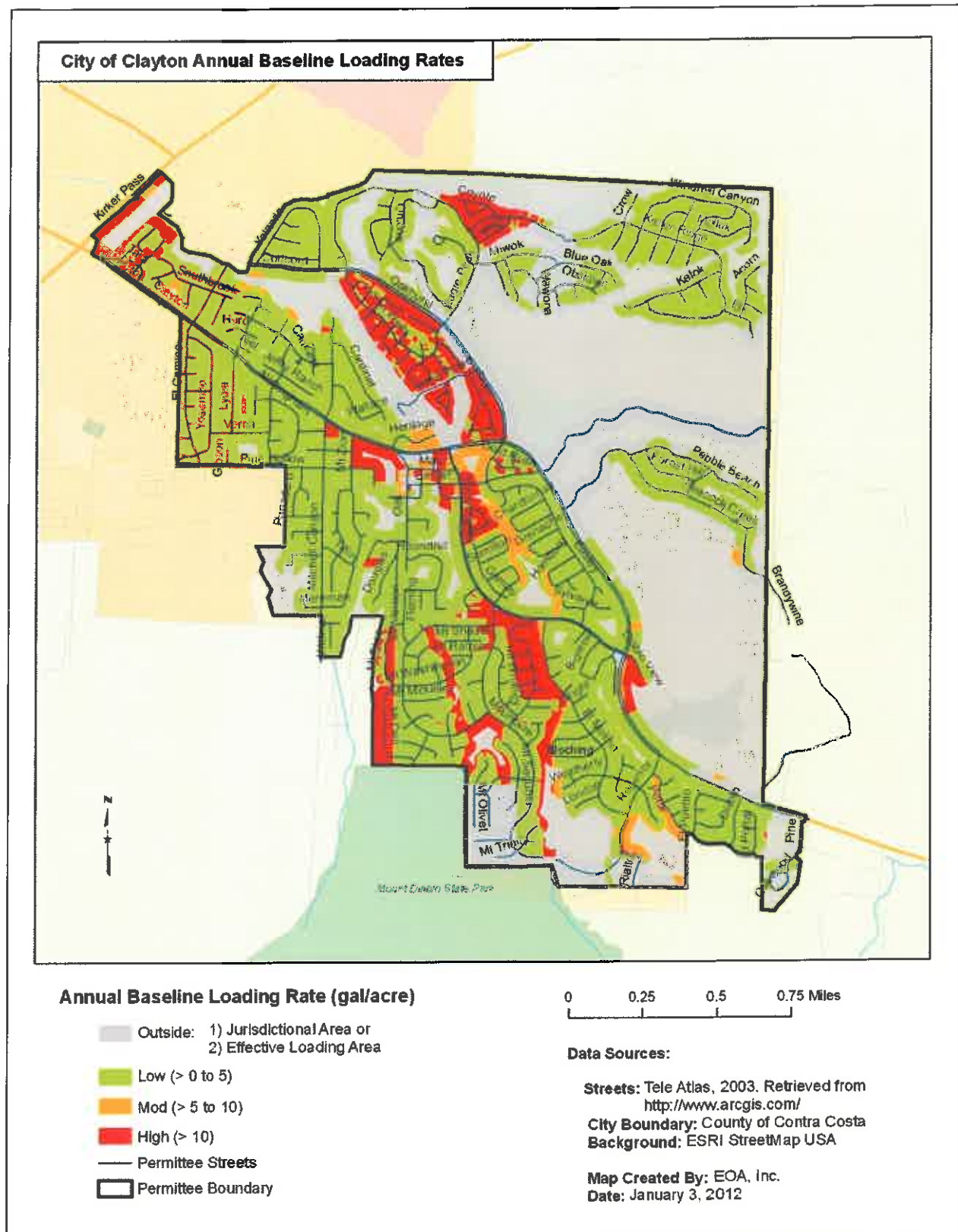


Figure 2-1: Estimated trash baseline loading rates for geographical areas in the City of Clayton.

3.0 LOAD REDUCTION CALCULATION PROCESS

Using the guiding principles and assumptions described BASMAA (2011e), a stepwise process for calculating trash load reductions was developed collaboratively through BASMAA. This process is fully described in Trash Load Reduction Tracking Method Technical Report (BASMAA 2011e) and is briefly summarized in this section. The process takes into at what point in the trash generation and transport process a trash control measure: 1) prevents trash generation, 2) intercepts trash in the environment prior to reaching a water body, or 3) removes trash that has reached a water body. In doing so, it avoids double-counting of trash load reductions associated with specific control measures.

To demonstrate trash load reductions, baseline trash loading rates will be adjusted using the following process:

Step #1: Existing Enhanced Street Sweeping

Step#2: Trash Generation Reduction

Step #3: On-land Interception

Step #4: Trash Interception in the Stormwater Conveyance System

Step #5: Trash Interception in Waterways

Step #6: Comparison to Baseline Trash Load

Reductions calculated in Steps 2 and 5 are assumed to be implemented at a constant rate on an “area-wide” basis. For example, if a new region-wide public education strategy is implemented within the San Francisco Bay area, all Permittees can apply load reduction credits associated with this control measure. In contrast, Steps 1, 3 and 4 are “area-specific” reductions that only apply to specific areas within a Permittee’s jurisdiction. Area-specific control measures include full-capture treatment devices and enhanced street sweeping. Area-specific reductions may require the use of a Geographic Information System (GIS) to calculate.

Reductions are generally applied in the sequence as presented in Figure 2-1 and described below, although some reductions may be applied “in-parallel” and calculated during the same sub-step in the process.

Step #1: Existing Enhanced Street Sweeping

Trash load reductions due to existing enhanced street sweeping implemented prior to the effective date of the MRP and conducted at levels above baseline levels are not incorporated into each Permittee’s trash baseline load. Therefore, load reductions associated with existing enhanced are accounted for first in the trash load reduction calculation process. Existing enhanced street sweeping includes street sweeping conducted at a frequency greater than **1x/week** for streets within retail land use areas or greater than **2x/month** for streets in all other land use areas. The result of adjustments made to trash baseline loads due to the implementation of existing enhanced street sweeping is a set of **current baseline loading rates** and a **current baseline load**.

Step #2: Trash Generation Reduction Control Measures

Trash generation reduction control measures prevent or greatly reduce the likelihood of trash from being deposited onto the urban landscape. They include the following area-wide control measures:

- CR-1: Single-Use Carryout Plastic Bag Ordinances
- CR-2: Polystyrene Foam Food Service Ware Ordinances
- CR-3: Public Education and Outreach Programs
- CR-4: Reduction of Trash from Uncovered Loads
- CR-5: Anti-Littering and Illegal Dumping Enforcement
- CR-6: Improved Trash Bin/Container Management
- CR-7: Single-Use Food and Beverage Ware Ordinances

Load reductions associated with trash generation reduction control measures are applied on an area-wide basis.² Therefore, reductions in current baseline loading rates are adjusted uniformly based on the implementation of the control measure and the associated credit claimed.

Baseline loading rate adjustments for all generation reduction controls measures implemented may be applied in-parallel, but should be applied prior to calculating on-land interception measures discussed in Step #3. The result of adjustments to trash baseline loading rates due to the implementation of these enhanced control measures will be a set of **street loading rates**. The **street load** is the volume of trash estimated to enter the environment and available for transport to the MS4 if not intercepted via on-land control measures described in Step #2.

Step #3: On-land Interception Control Measures

Once trash enters the environment, it may be intercepted and removed through the following control measures prior to reaching the stormwater conveyance system:

- QF-1: On-land Trash Cleanups (Volunteer and/or Municipal) (Area-wide)
- QF-2: Enhanced Street Sweeping (Area-specific)

Since on-land trash cleanups can affect the amount of trash available to street sweepers, load reductions associated with their implementation will be quantified first, followed by street sweeping enhancements. On-land trash cleanups will be applied as an area-wide reduction and all effective loading rates will be adjusted equally. Enhanced street sweeping, however, is an area-specific control measure and only those effective loading rates associated with areas receiving enhancements will be adjusted. Due to the spatial nature of enhanced street sweeping, GIS may be needed to conduct this step.

The result of adjustments to effective loading rates due to the implementation of these enhanced control measures will be a set of **conveyance system loading rates**. The **conveyance load** is the volume of trash estimated to enter the stormwater conveyance system (e.g., storm drains).

² The only exception to this statement are load reductions associated with the establishment of Business Improvement Districts (BIDs) or equivalent, which are specific to geographic areas and considered "area-specific".

Step #4: Control Measures that Intercept Trash in the MS4

Control measures that intercept trash in the stormwater conveyance system are area-specific. Therefore, they only apply to land areas and associated trash loads reduced. Conveyance system loading rates developed as a result of Step #3 should be adjusted in-parallel for the following control measures:

- QF-3a: Partial-capture Treatment Device: Curb Inlet Screens (Area-specific)
- QF-3b: Partial-capture Treatment Device: Stormwater Pump Station Trash Racks Enhancements (Area-specific)
- QF-4: Enhanced Storm Drain Inlet Maintenance (Area-specific)
- QF-5: Full-Capture Treatment Devices (Area-specific)

Load reductions for these control measures are calculated in-parallel because they are applied to independent geographical areas. Reductions from all control measures described in this step are area-specific and may require the use of GIS to calculate a set of **waterway loading rates**. Once waterway loading rates have been determined, a **waterway load** will be developed and used as a starting point for calculating load reductions associated with trash interception in waterways discussed in Step #5.

Step #5: Control Measures that Intercept Trash in Waterways

The load of trash that passes through the stormwater conveyance system without being intercepted may still be removed through interception in waterways. There are two control measures associated with interception in waterways:

- QF-3c: Partial-capture Treatment Device: Litter Booms/Curtains (Area-wide)
- QF-7: Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (Area-wide)

As these control measures are implemented, load reduction estimates can be calculated in-parallel for these two measures.

Step #6: Comparison to Baseline Trash Load

Applying the four steps described in the processes above will provide an estimated trash load (volume) remaining after trash control measures are implemented. As depicted in the following equation, the relative percent difference between the baseline load and the load remaining after control measures are implemented is the percent reduction that will be used to assess progress towards MRP trash load reduction goals.

$$\frac{\text{Baseline Load} - \text{Remaining Load}}{\text{Baseline Load}} = \% \text{ Reduction}$$

4.0 ENHANCED TRASH CONTROL MEASURES

This section describes the new or enhanced trash control measures planned for implementation by the City of Clayton. The enhanced control measures described are designed to reach a 40% reduction by July 1, 2014. New and enhanced control measures that will be implemented by City of Clayton include those listed in Table 4.1.

Table 4.1. Trash control measures that will be implemented by City of Clayton to reach the 40% trash load reduction.

	Control Measure
CR-3	Public Education and Outreach Programs
CR-5	Anti-Littering and Illegal Dumping Enforcement Activities
CR-6	Improved Trash Bin/Container Management (Municipally or Privately-Controlled)
QF-1	On-land Trash Pickup (Volunteer and/or Municipal)
QF-2	Enhanced Street Sweeping
QF-4	Enhanced Storm Drain Inlet Maintenance
QF-5	Full-Capture Treatment Devices
QF-6	Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

CR-3: Public Education and Outreach Programs

Permittees in the San Francisco Bay Area have implemented public education and outreach programs to inform residents about stormwater issues relating to pollutants of concern, watershed awareness and pollution prevention. Public education and outreach efforts include developing and distributing brochures and other print media; posting messages on websites and social networking media (Facebook, Twitter etc.), attending community outreach events, and conducting media advertising. In recent years, some municipal agencies have implemented anti-litter campaigns to increase public awareness about the impacts of litter on their communities and water quality; and to encourage the public to stop littering.

Baseline Level of Implementation

The City of Clayton implemented the following public education and outreach control measures prior to the effective date of the MRP. The City of Clayton provided brochures at the local Art and Wine Festival and periodically at the Library, and its hauler direct mailed materials. These control measures are considered baseline because they were either not related to trash reduction specifically, or they are not planned to be continued during the term of the MRP. New actions or actions started prior to the effective date of the MRP and continued into the future are described under the next section.

Enhanced Level of Implementation

The City of Clayton has implemented and will continue to implement the following public education and outreach control measure after adoption of the MRP. Annual information mailed to residents and businesses regarding anti-litter/proper disposal of materials and haulers expanded trash and recycling services. Periodic (quarterly) articles in local paper (Clayton Pioneer) information on the city web site, its government access TV bulletin board announcement; distribution of brochures at City Hall and Library, and at special community events such as the Art and Wine Festival; Oktoberfest. The City of Clayton has implemented and plans to continue to provide public announcements of annual volunteer creek and road clean ups (Clayton Cleans Up). All of these actions are to help increase the overall awareness of the importance of anti-litter behavior and methods.

Additionally, the City of Clayton has implemented and plans to continue to supporting the Contra Costa Clean Water Program public education and outreach events on behalf of the City of Clayton, including but not limited to anti-littering media campaigns; outreach to school age children and youth, such as the Kids for the Bay program; media relations and community outreach events; and the continued support for the BASMAA media campaigns targeting litter; and the Bay Roc media campaigns for proper disposal and recycling.

Percent Reduction from Enhancements

The City of Clayton will receive an eight percent reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section above. The eight percent reduction credit will be applied to the City of Clayton's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in Section 4.0.

CR-5: Anti-Littering and Illegal Dumping Enforcement Activities

Successful anti-littering and illegal dumping enforcement activities include laws or ordinances that make littering or dumping of trash illegal. Laws are enforced by various municipal agency staff (e.g., police, sheriff and public works department staff) who issue citations in response to citizen complaints or other enforcement methods (e.g., surveillance cameras, signage and/or physical barriers installed at illegal dumping hot spots). In some California jurisdictions, the minimum fine for littering is \$500 and the maximum penalty for highway littering is \$1000 (City of San Francisco 2001). However, it is difficult to enforce small littering events unless they are witnessed or solid proof exists linking the offender to the litter. As a result, enforcement tends to focus on larger scale illegal dumping activities.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the City of Clayton has adopted a basic anti-littering and illegal dumping enforcement program that entails receiving and responding to complaints from citizens as resources allow. For the City of Clayton this also includes hiring as may be necessary Contra Costa Central Sanitary District (Central Sans) to assist with investigating illegal dumping reports.

Enhanced Level of Implementation

The City of Clayton will implement the following enhanced anti-littering and illegal dumping enforcement control measures prior to July 1, 2014. The City has a part time code enforcement staff person will coordinate with investigations of complaints received from email, through city website or phone. The part time code enforcement procedures will include including citations (as warranted); and, the collection of evidence (e.g., names, addresses, etc.) from illegal dump sites (i.e., public and private) in an attempt to identify offenders; additionally the part time code enforcement staff person will coordinate and use the assistance of city police staff as warranted.

Percent Reduction from Enhancements

The City of Clayton will receive a two percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The two percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Clayton. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e) and is presented in the Trash Load Reduction Summary Table included in Section 4.

CR-6: Improved Trash Bin/Container Management

Receptacles used to place/store trash or recyclables prior to collection by a public agency or private waste hauler reduce the potential for littering and trash loading to stormwater conveyance systems and receiving waters (City of Los Angeles 2004). For the purposes of assigning trash load reduction credits, receptacles fall into the following two categories:

- **Private Trash/Recycling Bins:** A receptacle for placing trash or recyclables generated from a household, business, or other location that is serviced by a trash hauler. Bins are specifically-designed, heavy-duty plastic wheeled containers with hinged lids; or large multi-yard metal or plastic containers rectangular in shape.
- **Public Area Trash Containers:** A receptacle for placing incidental trash generated in public spaces that provides people with a convenient and appropriate place to dispose of trash. The design and size of public area trash containers vary widely, depending on their setting and use.

The effectiveness of bins/containers and bins in reducing trash in the environment is likely dependent upon: the location and density of the receptacles, size of the bin/container in relationship to the size needed to service users, frequency of maintenance, and the ability of the bin/container to capture and contain the trash deposited.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the City of Clayton has not implemented enhanced trash bin/container management practices prior to effective date of the MRP. The City hauler has not conducted a recent audit of the adequacy of services in the residential and commercial sectors to determine if there are any issues. However after the adoption of the MRP the City of Clayton installed additional trash and recycling containers at its higher use parks. The City will continue to service these containers twice a week. The City maintenance staff has not assessed if the placement and servicing schedule are adequate to manage trash types that are typically generated from these areas. Also after adoption of the MRP the City installed and plans to continue its specialty collection container at city hall police offices for sharps and pharmaceuticals.

Enhanced Level of Implementation

The City of Clayton will implement the following improved trash bin/container management practices prior to July 1, 2014.

Ensuring Adequate Private Trash Service – Implementation of a program through our hauler that identifies businesses or households that have inadequate trash service (i.e., insufficient trash collection or use of bins which are too small); and through municipal code enforcement or other authorities requiring businesses/households to sufficiently remedy the issue.

Implementation of Strategic Plan for Public Area Trash Containers – Implementation of a strategic plan that:

-Identifies if public area trash containers are sufficiently located in high trash generating areas and are adequately designed to manage trash types that typically are generated from activities occurring at these areas and are in locations where people dispose of these items (e.g., near schools or parks).

Identifies an increased level of inspection and maintenance of public area trash containers is needed at high trash generating sites.

Includes the assessment of the recently installed specialty bins/containers for sharps and pharmaceuticals which eliminate or reduce the prevalence of these items in stormwater. The assessment will consider quantities dropped off, public outreach of the container location and adequacy of collection bin and service (collection) by the hauler.

Percent Reduction from Enhancements

The City of Clayton will receive a six percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The six percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Clayton. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e) and is presented in the Trash Load Reduction Summary Table included in Section 4.

QF-1: Enhanced On-Land Trash Cleanups (Volunteers and/or Municipal)

On-land cleanups conducted by Permittees and volunteers have been successful in removing trash from identified trash hot spots and engaging local citizenry in improving their communities. Permittees have several programs in place to address on-land trash. Municipal efforts relate to ongoing beautification of impacted areas and coordination of cleanup events. Volunteer on-land cleanups involve the meeting of individuals, creek and watershed groups, civic organizations, businesses and others at designated or adopted on-land sites to remove trash. On-land trash cleanups are conducted as single-day or throughout the year.

Baseline Level of Implementation

The City of Clayton implemented the following on-land cleanup activities prior to the effective date of the MRP. The City did not conduct regular on-land clean ups. These control measures are considered baseline because they were accounted for in the preliminary trash generation rates established through the BASMAA *Baseline Trash Loading Rates Project*. New or enhanced actions that began or are planned to begin after to the effective date of the MRP are described under the next section.

Enhanced Level of Implementation

Prior to July 1, 2014, the City of Clayton will be conducting or coordinating the following new or enhanced on-land trash cleanup activities listed below. These on-land cleanups will be conducted or coordinated each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

Please note that **only trash that has the potential of entering the MS4 will be tracked**. As a result, large items (e.g., appliances, shopping carts, furniture, mattresses, televisions, tires, lumber, etc.) that will be removed during on-land trash cleanups are not part of the volume determination since they do not have the potential of entering the MS4.

The City of Clayton Maintenance staff will pick up trash when it conducts its roadway landscape vegetation maintenance which is two times a year on the major arterial and certain collector streets. In addition the City maintenance staff will assist and oversee the use of unpaid workers picking up trash along the City of Claytons main arterial streets on a quarterly basis. In addition the annual Clayton Cleans Up, a single half day event allows for volunteers to collect trash along sections of the arterials and collector and downtown streets, trails and parks. The Clayton Cleans up the City provides the trash bags and disposes of collected trash. The City staff will assist as needed with the community volunteer committee on publicity and outreach as may be needed.

The City just modified its franchise agreement with its hauler (after adoption of the MRP) and the hauler is now responsible to illegal dump site response and abatement. City staff will coordinate with the hauler.

The City has a Adopt a Trail program is listed in that allows for the adopters to do light maintenance of trimming of vegetation and litter pick up on a quarterly basis. The Clayton Cleans up the City provides the trash bags and disposes of collected trash. The City staff will assist as needed with the community volunteer committee on publicity and outreach as may be needed. As the city trails are along the creek areas this type of effort will assist in reduction of litter into the waterways. Since most of the interest is in vegetation maintenance there is not any quantity of trash reduction assigned to this program. City staff will continue its Hot Spot clean up however this is a creek location, and listed in QF-6 (Creek Cleanup) and not included in the on-land section.

The City of Clayton rarely has any homeless encampment or illegal dumping, none have been reported or observed in recent years. City maintenance, police other city staff and the public are attentive in these matters and if identified or observed they are immediately followed up on and abated.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced beginning July 1, 2014 as a result of implementing on-land trash cleanups is or apx. 1400 cubic feet or 1000 gallons. This volume is equal to approximately a 23 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Clayton. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

QF-2: Enhanced Street Sweeping

Street sweeping is conducted by most, if not all, Bay Area municipalities to remove trash and debris that collect in the gutters at the edge of streets. Parked cars and large storms that produce significant runoff can impact the effectiveness of street sweepers. However, increasing parking enforcement or more frequent street sweeping (as compared to the frequency of storm events) may increase the trash load reduced to MS4s. Permittees who choose to enhance street sweeping may do so to demonstrate trash load reductions to their MS4s and progress towards trash load reduction goals required by the MRP.

Baseline Level of Implementation

The baseline trash load described in Section 2.0 incorporates the trash load reductions due to baseline street sweeping.

As stated in Section 2 the City of Clayton's baseline and current street sweeping program includes sweeping most streets in residential areas, downtown, and arterial roads once a month from August to December. This time period includes three months during the wet season and two months during the dry season.

Parking enforcement signs for street sweeping are not posted in the City, and there is no parking enforcement equivalent. The estimated trash load reduced via baseline street sweeping is presented in Table 2-3.

Enhanced Level of Implementation

Enhancements to street sweeping frequencies and parking enforcement (or equivalent measures) control measures will be used to calculate loads reduced from enhanced street sweeping, consistent with the trash load reduction tracking method (BASMAA 2011e). A list of planned enhancements is included in Table QF-3-1 and illustrated in Figure QF-3-1. Enhancements include:

The City sweeping is monthly on all city streets. Additionally there are 15 curb lane miles of street that are a rock quarry truck route. The Quarry sweeps at least 2 x a week on these. A portion of the quarry route is across the frontage of a commercial neighborhood shopping center. There are 10 curb lane miles of private streets that the HOA landscape maint companies clean using non truck methods (ie: blow and sweep and remove) on a weekly basis weather permitting.

The City of Clayton schedules with its sweeper and the quarry sweeper to ensure that the sweepers operationally can get to the curb during sweeping due to: the timing of sweeping (no parked cars), no parking being allowed, or the lack cars parked on street segments; these measures will provide an "equivalency" to parking enforcement for those segments where sweepers operationally can get to the curb.

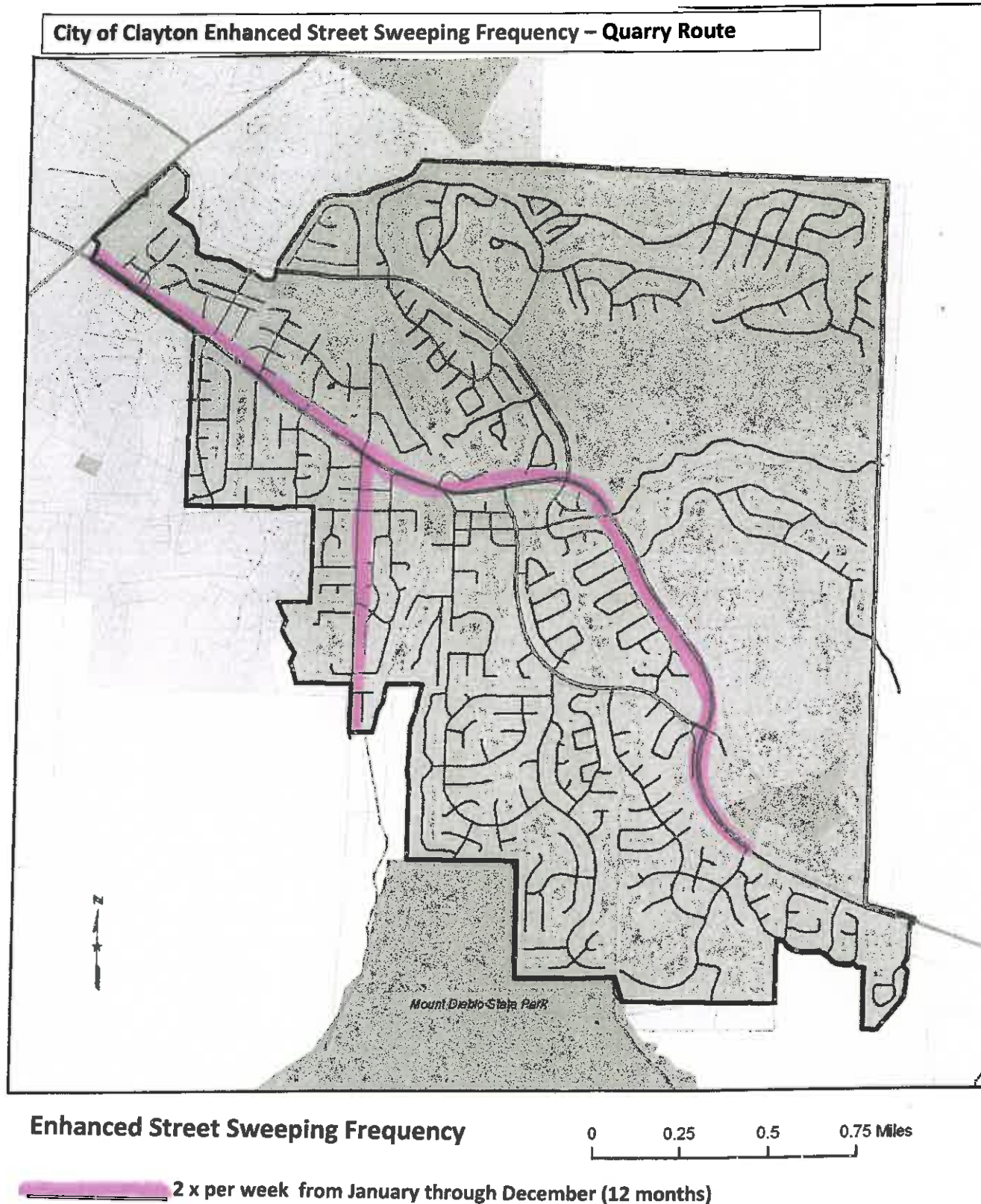
Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of enhanced street sweeping is 6286 cubic feet or 898 gallons. As described in Trash Load Reduction Summary Table included in Section 4, this volume is equal to approximately a 21 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Clayton.

Table QF-3-1. Planned enhanced street sweeping program in the City of Clayton.

Route ID	Approximate Length Swept (curb miles)	Baseline		Enhanced	
		Frequency	Parking Enforcement	Frequency	Parking Enforcement
Quarry	15	none	none	2x week	yes
Citywide	84	Quarterly	None	Monthly	yes
Private	10	none	None	Weekly (weather permitting)	yes

Figure QF-3-1: Planned enhanced street sweeping program in the City of Clayton, Quarry Route



Streets: Tele Atlas, 2003. Retrieved from <http://www.arcgis.com/>
City Boundary: County of Contra Costa
Background: ESRI StreetMap USA

Figure QF-3-1: Planned enhanced street sweeping program in the City of Clayton, Citywide Route

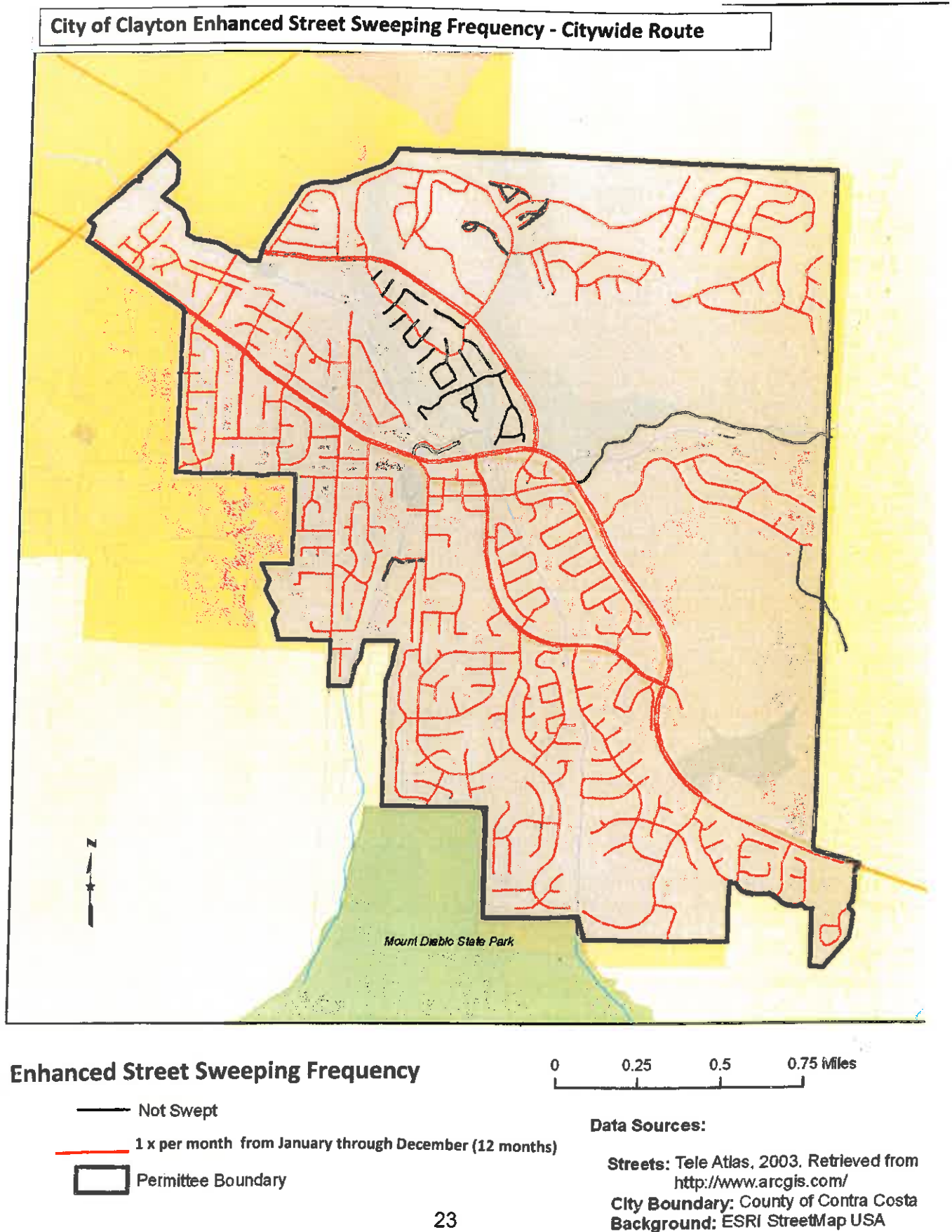
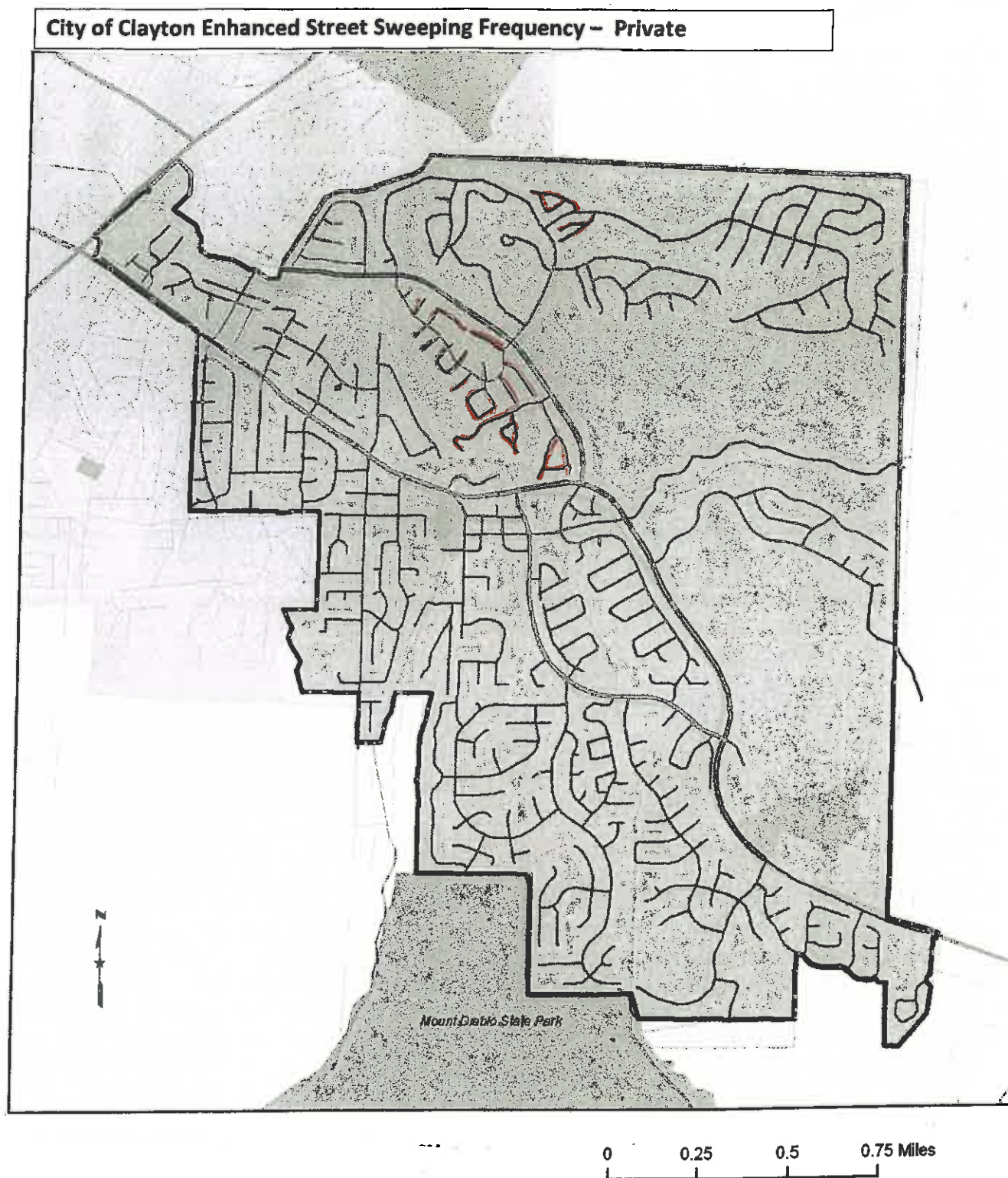


Figure QF-3-1: Planned enhanced street sweeping program in the City of Clayton, Private



Enhanced Street Sweeping Frequency

1 x per week from January through December (12 months) weather permitting

QF-4: Enhanced Storm Drain Inlet Maintenance

In accordance with countywide Stormwater Conveyance System Operation and Maintenance Performance Standards, storm drain inlets are maintained at least once per year by Permittees. Permittees who have enhanced storm drain inlet maintenance by increasing the frequency of cleanouts may use the load of trash reduced to MS4s to demonstrate attainment of trash load reduction goals required by the MRP.

Baseline Level of Implementation

The baseline trash load described in Section 2.0 assumes that the City of Clayton currently maintains and removes material from storm drain inlets at least once per year. This baseline frequency is consistent with the frequency of storm drain inlet maintenance in the City of Clayton prior to the effective date of the MRP.

Enhanced Level of Implementation

A total of ten storm drain inlets will be maintained in the City of Clayton at higher frequencies prior to July 1, 2014. Currently the City inspects all drainage inlets annually and cleans the ones identified during the inspection process. Ten drainage inlets which will have CPS devices installed will receive the enhanced quarterly maintenance. This will involve the removal of any debris in the inlet. The enhanced frequency of maintenance and associated effectiveness ratings will be used to calculate loads reduced from enhanced maintenance. This load reduction calculation method is consistent with the trash load reduction tracking method (BASMAA 2011e).

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing enhanced storm drain inlet maintenance is 350 cubic feet, or 50 gallons. This volume is equal to approximately a 1 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Clayton. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

QF-5: Full-Capture Treatment Devices

As defined by the Municipal Regional Stormwater Permit (MRP), a full-capture system or device is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate (Q) resulting from a one-year, one-hour, storm in the sub-drainage area. A list of the full-capture systems and devices recognized by the San Francisco Bay Regional Water Quality Control Board (Water Board) is included in *Trash Load Reduction Tracking Method Report* (BASMAA 2011e). Trash loads reduced via publically or privately owned and operated devices within a Permittee's jurisdictional area that have been recognized by the Water Board as full-capture may be used to demonstrate attainment of trash load reduction goals.

Baseline Level of Implementation

Prior to adoption of the MRP, some Permittees installed and maintained full capture devices. To avoid penalizing these early implementers, an applicable control measure implemented within a Permittee's jurisdictional area prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is no trash full-capture devices have been installed.

Enhanced Level of Implementation

A total of ten trash full-capture treatment devices have been or will be installed in the City of Clayton prior to July 1, 2014. A list of these full-capture devices is included in Table QF-6-1. All devices listed within this table are enhanced trash control measures. Table QF-6-1 also includes the area treated and the calculated trash load reduced from each full-capture treatment device. These calculations are consistent with the approach described in the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e).

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing full capture devices is apx. 365 cubic feet, or 52 gallons. This volume is equal to approximately a 1.2 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Clayton. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

Table QF-6-1. Trash full-capture treatment devices within the jurisdictional boundaries of the City of Clayton that are planned for installation by July 1, 2014.

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Total Area Treated (acres)	Trash Load Reduced
1 – 6	Public	Waterway solutions Connector Pipe Screen	To Be Determined Residential	August 2012	25.4	7 gal/year
7-8	Public	Waterway solutions Connector Pipe Screen	To be determined Retail commercial Downtown Clayton Main/Center	August 2012	8.5	44 gal/year
9-10	Public	Waterway solutions Connector Pipe Screen	To be determined Park Marsh Creek Road near Regency	August 2012	8.5	3 gal/ year

QF-6: Creek/Channel/Shoreline Cleanups

Creek/channel/shoreline cleanups have been successful in removing large amounts of trash from San Francisco Bay area creeks and waterways; and increasing citizen's awareness of trash issues within their communities. Creek/channel/shoreline cleanups are conducted as single-day events or throughout the year by volunteers and municipal agencies. Since volunteers and municipal agencies have the common goal of clean creeks and waterways, their efforts sometimes overlap. This is apparent with some municipal agencies using volunteers to help assess and clean designated trash hot spots during single-day volunteer events.

Baseline Level of Implementation

Trash reduced via creek/channel/shoreline cleanups was not accounted for in the City of Clayton's baseline trash load described in Section 2.0. Therefore, implementation of any of the control measures described in this section is considered to be an enhancement and can be used to demonstrate progress towards load reduction goals.

Enhanced Level of Implementation

Prior to July 1, 2014, the City of Clayton will conduct MRP-required³ and the following non MRP-required creek/channel/shoreline cleanups⁴ listed below. Both types of cleanups will be conducted each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

The total estimated amount of trash reduced from the Clayton Cleans Up in the creek area is about 100 gallons. In addition there is a shopping center that maintains a section of creek an estimated removes 160 gallons annually. They are required to remove trash and debris from the creek on at least a monthly basis weather permitting. The shopping center location is the City only 'hot spot'. The city maintenance staff also removes about 200 gallons annually as part of its annual maintenance, including the annual "hot spot". The combined annual total is 460 gallons. The City relies on volunteer efforts that do not require staff oversight or assistance as well as having the shopping center maintains the creek area behind them as part of their property maintenance. The City of Clayton rarely has any homeless encampment or illegal dumping, none have been reported or observed in recent years. City maintenance, police other city staff and the public are attentive in these matters and if identified or observed they are immediately followed up on and abated.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing creek cleanups is apx. 3220 cubic feet, or 460 gallons per year. This volume is equal to approximately a 10.6 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Clayton. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

³ Creek/channel/shoreline cleanups conducted in accordance with Permit Provision C.10.b.

⁴ All "other" creek/channel/shoreline cleanups conducted by a municipality that are not required by Provision C.10.b.

5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS

The City of Clayton is committed to reducing the potential for trash impacts in local water bodies in the San Francisco Bay Area. The planned enhanced trash control measures described in Section 3.0 are also listed in Table 5-1. The enhancements are intended to comply with the 40% trash load reduction goal in MRP provision C.10.

Table 5-1. Planned enhanced trash control measure implementation within the jurisdictional boundaries of the City of Clayton and associated trash loads reduced.

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced	Cumulative % Reduction (Compared to Baseline)
Public Education and Outreach Programs (CR-3)	Brochures, free media, and community outreach. Periodic (quarterly) articles in local paper (Clayton Pioneer) information on the city web site, its government access TV bulletin board announcement; distribution of brochures at City Hall and Library, and at special community events	8	346 gal/yr	8
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Coordinate investigations of complaints received from email, through city website or phone. the collection of evidence from illegal dump sites in an attempt to identify offenders; coordinate and use the assistance of city police staff as warranted.	2	86 gal/yr	10
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	Ensure adequate Private Trash Service- Conduct assessment audit to identify any businesses or households that have inadequate trash service, and follow up. Strategic Plan for Public Area Trash Containers; Ensure trash containers in public parks are sufficient quantity/size and are located and are adequate and have appropriate service level; assessment of the recently installed specialty bins/containers for sharps and pharmaceuticals which eliminate or reduce the prevalence of these items in stormwater. The assessment will consider quantities dropped off, public outreach of the container location and adequacy of collection bin and service	6	259 gal/yr	16

Table 5-1. Continued-- Planned enhanced trash control measure implementation within the jurisdictional boundaries of the City of Clayton and associated trash loads reduced.

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced	Cumulative % Reduction (Compared to Baseline)
Enhanced On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	Quarterly volunteer pick up on main roadways; annual community half day pick up activity; semi-annual pick by maintenance staff on main roadways	NA	1000 gal/yr	39.1
Enhanced Street Sweeping (QF-2) – (Existing and Future Enhanced)	Monthly sweeping on all public streets citywide; 2 x week on quarry route; weekly non truck – hand sweep and pick up on private streets by HOA landscape maint company	NA	898 gal/yr	59.9
Enhanced Storm Drain Inlet Maintenance (QF-4)	City Maint staff to clean 10 DI's on quarterly basis	NA	1 gal/yr	.1
Full-capture Treatment Devices (QF-5)	Installation of 10 Waterway solutions Connector Pipe Screens (CPS)	NA	51 gal/yr	61.1
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Increased hot spot cleaning by shopping center landscape maint company; annual volunteer cleanup; city maint annual clean up	NA	460 gal/yr	71.8

5.1 Annual Reporting and Progress Towards Trash Load Reduction Goal(s)

Consistent with MRP Provision C.10.d (i), the City of Clayton intends to report on progress towards MRP trash load reduction goals on an annual basis beginning with the Fiscal Year 2011-2012 Annual Report. Annual reports will include:

1. A brief summary of all enhanced trash load reduction control measures implemented to-date;
2. The dominant types of trash likely removed via these control measures;
3. Total trash loads removed (credits and quantifications) via each control measure implementation; and
4. A summary and quantification of progress towards trash load reduction goals.

Similar to other MRP provision, annual reporting formats will be consistent region-wide. Annual reports are intended to provide a summary of control measure implementation and demonstrate progress toward MRP trash reduction goals. For more detailed information on specific control measures, the City of Clayton will retain supporting documentation on trash load reduction control measure implementation. These records should have a level of specificity consistent with the trash load reduction tracking methods described in the *BASMAA Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

5.2 Considerations of Uncertainties

Baseline trash loading and load reduction estimates are based on the best available information at the time this Short-Term Plan was developed. As with any stormwater loading and reduction estimate, a number of assumptions were used during calculations and therefore uncertainty is inherent in the baseline trash load estimate presented in Section 2.0 and the load reduction estimate presented in this section. For these reasons, the baseline loading estimates presented in this plan should be considered first-order estimates. During the implementation of this Short-Term Plan and subsequent plans, additional information may become available to allow the calculation of a more robust baseline load.

6.0 IMPLEMENTATION SCHEDULE

Implementation of enhanced trash control measures by the City of Clayton is currently planned to occur in a timeframe consistent with MRP requirements. A preliminary implementation schedule for all planned enhancements is described in Table 5-1. This schedule provides a timeframe for reducing trash discharged from the City of Clayton's MS4 by 40%.

Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the City of Clayton may choose to amend or revise this Plan and/or the associated implementation schedule. If revisions or amendments occur, a revised Short-Term Plan and implementation schedule will be submitted to the Water Board via the City of Clayton's annual reporting process.

Table 6-1. Preliminary implementation schedule for enhanced trash control measures in the City of Clayton.

Trash Control Measure	Beginning Date of Implementation
Public Education and Outreach Programs (CR-3)	January 2013
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	January 2013
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	January 2013
On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	April 2012
Enhanced Street Sweeping (QF-2)	April 2012
Enhanced Storm Drain Inlet Maintenance (QF-4)	December 2012
Full-capture Treatment Devices (QF-5)	August 2012
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	April 2012

7.0 REFERENCES

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